**TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color FISH Probe**

Control Number: 902-7041-052517

**Catalog Number:** PFR7041A

**Description:** TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color FISH Probe

**Dilution:** Ready-to-use

**Volume:** 100 µL

**Intended Use:**
For Research Use Only. Not for use in diagnostic procedures.

**Summary and Explanation:**
Cervical cancer is one of the most common cancers affecting women worldwide. The implementation of cytogenetic based screening techniques has greatly reduced the incidence and mortality of cervical cancer in the United States[^1]. Moreover, traditional screening methods such as Pap smears and human papillomavirus (HPV) based testing are utilized to stratify and identify patients with high grade cervical cancer[^2]. Specifically, fluorescence in-situ hybridization based HPV–associated cancer tests are able to identify hallmark cytogenetic abnormalities that are associated with cervical cancer carcinogenesis[^3]. Chromosomal gains at TERC (3q26.2), 5p15.2 and copy control 7 are associated with cervical cancer pathogenesis. In addition, the detection of CDKN2A(p16) gene overexpression has proven to be a valuable biomarker in HPV associated diseases[^4]. FISH can be used as a diagnostic tool to detect these specific genetic abnormalities.

**Principle of Procedure:**
The TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color FISH probe is designed to detect copy number variations of the TERC (3q26.2), 5p15.2 and CDKN2A (p16) regions as well as enumeration of chromosome 7. The TERC (3q26.2) probe is ~618kb, located on chromosome 3q26.2 covering the TERC gene and is labeled in red. The 5p15 probe is ~353kb, located on chromosome 5p15.2 spanning the CTNND2 gene and is labeled in green. The copy 7 enumeration probe consists of highly repeated human α-satellite DNA sequences located at the centromere region of chromosome 7 and is labeled in aqua. The CDKN2A (p16) probe is ~298kb, located on chromosome 9p21.3 covering the CDKN2A (p16) gene and is labeled in orange. A normal cell would show two red, two green, two aqua and two orange signals.

**Species Reactivity:** Human

**Known Application:**
Fluorescence In-situ Hybridization (FISH) on formalin-fixed paraffin-embedded (FFPE) tissues.

**Supplied As:** Probe in hybridization buffer.

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[^2]: [Fluorescence in-situ hybridization (FISH) for cervical cancer](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2951716/)
[^3]: [Cytogenetic abnormalities in cervical cancer](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2049917/)
[^4]: [CDKN2A overexpression in HPV-associated diseases](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3182822/)
Storage and Stability:
Store probe at -20°C and away from light. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date.

Technical Note:
Biocare Medical Four FISH probes are optimized to provide the best signal performance using optical filters that can accommodate the excitation/emission wavelengths specified below. Using filters outside these spectral specifications may produce sub-optimal results.

<table>
<thead>
<tr>
<th>Fluorophore</th>
<th>Excitation (nm)</th>
<th>Emission (nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQUA</td>
<td>434</td>
<td>481</td>
</tr>
<tr>
<td>GREEN</td>
<td>498</td>
<td>522</td>
</tr>
<tr>
<td>ORANGE</td>
<td>537</td>
<td>556</td>
</tr>
<tr>
<td>RED</td>
<td>592</td>
<td>628</td>
</tr>
</tbody>
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Limitations:
This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:
1. This product contains formamide and fluorescent dyes that may be hazardous to your health. The SDS is available upon request and is located at http://biocare.net.
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water.

Technical Support:
Contact Biocare’s Technical Support at 1-800-542-2002 for questions regarding this product.

References: